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SOME NEW OR NOTEWORTHY GUATEMALAN ORCHIDS

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IN THE COURSE of our recent studies of Guatemalan orchids, twelve new species and one variety have been recognized. This paper includes descriptions of these novelties and presents also a number of new combinations which were found to be necessary.

***Cranichis hieroglyphica* Ames & Correll sp. nov.**

Herba terrestris, unica, erecta vel basi geniculata. Caulis gracilis, pubescens, bracteatus. Folia duo, basalia, subopposita, patentia, vaginis pluribus scariosis amplexantibus prope basim inclusa; lamina oblique elliptica vel ovato-elliptica, acuta vel abrupte acuminata, succulenta, glabra. Racemus densus, cylindraceus. Flores parvi, succedanei. Florum bracteae albae, lanceolatae, acuminatae. Sepala ovato-elliptica, anguste obtusa vel subacuminata, uni- vel binervia, concava. Petala lineari-lanceolata vel anguste elliptica, obtusa, leviter obliqua, uninervia, marginibus longis cum pilis albidis ciliatis, per medium prope basim minute hirsuta. Labellum sessile, subquadrato-ovatum, anguste obtusum, basi utrinque angulatum; discus lineis leviter incrassatis viridibus, linea media brevi cum linea horizontali medium versus utrinque vergenti et cum linea U-formi prope basim utrinque ornatus. Columna generis.

Plant terrestrial, solitary, erect or geniculate at the base, 2.5–4.5 dm. tall. Stem slender, pubescent with whitish articulated hairs, provided with several short tubular acuminate bracts, 2–3 mm. in diameter. Leaves two, basal and subopposite, spreading on the ground, enclosed at base by two or more scarious clasping sheaths; petiole winged, 2–4.5 cm. long; lamina oblique, elliptic to ovate-elliptic, acute to abruptly acuminate, 4.5–11.5 cm. long, 2.7–5.5 cm. wide, succulent, glabrous, silvery green and glossy beneath, dark-veined above with a reticulate pattern over a dull silvery green background. Inflorescence a compact terminal raceme of twenty to thirty small white flowers which blossom in close succession; raceme cylindrical, 2.5–3.5 cm. long, about 2 cm. in diameter. Floral bracts white, lanceolate, acuminate, 5–6 mm. long. Flowers with stout puberulent pedicellate ovaries. Sepals ovate-elliptic, narrowly obtuse to subacuminate, 1- to 2-nerved, concave, 2.5–3.1 mm. long, 1.3–1.5 mm. wide; lateral sepals slightly oblique. Petals somewhat oblique, linear-lanceolate to narrowly elliptic, obtuse, 1-nerved, ciliate with long whitish hairs, finely hirsute through the center near the base, 2–2.5 mm. long, about 0.7 mm. wide. Lip sessile, subquadrate-ovate, narrowly obtuse, angled on each side at the base, concave, 2–2.5 mm. long, 1.3–1.5 mm. wide; disc adorned with somewhat thickened green stripes, with a short central stripe, a subhorizontal stripe on each side which converge toward the middle and a deeply U-shaped stripe on each side near the base. Column short, terete, about 1.5 mm. long.

Cranichis hieroglyphica is most closely related to *C. Wageri* Reichb.f. However, besides having smaller flowers, the floral segments of *C. hieroglyphica* are comparatively blunt as compared with the narrowly acuminate floral segments of *C. Wageri*. Although the petals

of both species are ciliate, those of *C. hieroglyphica* are obtuse while those of *C. Wageri* are long-acuminate. The shape of the lip and the pattern of the venation are different in the two species. The lip of *C. Wageri* is narrowly ovate to subcordate and acuminate and the stripe design is composed of three parallel green or brownish stripes with the lateral ones producing retrorse secondary stripes. The lip of *C. hieroglyphica*, on the other hand, is subquadrate-ovate and obtuse and the stripe design, from which the name is derived, is a peculiar pattern. The design of green stripes is composed of a short central stripe with an additional subhorizontal one on each side which converges toward the middle and has a deeply U-shaped stripe on each side near the base. The stripes are somewhat thickened.

GUATEMALA: Chiquimula, upper slopes of Montaña Tajurán, in the vicinity of El Barriol, alt. 1200-1700 m., terrestrial in cloud forest, Oct. 28, 1939, *J. A. Steyermark 30816* (Herb. Field Mus.). Guatemala, Volcán de Pacaya, above Las Calderas, alt. 1800-2400 m., damp forest, Nov. 30, 1938, *P. C. Standley 58432* (Herb. Field Mus.); terrestrial, near San Rafael, road to Antigua, about 6000 ft. alt., Sept. 8, 1935, *Margaret Ward Lewis 154* (TYPE in Herb. Ames No. 60792).

***Spiranthes stolonifera* Ames & Correll sp. nov.**

Herba terrestris, aphylla ut videtur, gracilis, rigide erecta, ex radice tuberiformi unica exoriens, stolonifera, basi leviter geniculata, supra canescens. Caulis vaginis adpressis tubulatis subobtusis vel acutis ornatus. Inflorescentia biflora. Florum bracteae magnae, lanceolatae, acuminatae. Flores pro genere grandes. Ovaria cum pedicello fusco-puberula. Sepala extus et margine dense tuberculoso-puberula. Sepalum dorsale elliptico-lanceolatum, obtusum vel breviter subacuminatum, quinque-nervium, supra recurvum. Sepala lateralia libera, patentia, lanceolata, acuta vel subobtusa, leviter obliqua, trinervia, leviter carinata. Petala conspicue falcata, oblanceolata,

obtusa. Labellum in positu naturali arcuato-decurvatum, extensum oblongo-oblancheolatum, supra medium constrictum; pars inferior sulcata, basi concavo-saccata et cum callo mamillato submarginali utrinque praedita, extus puberula; pars anterior plana et patens, late ovata vel elliptico-subquadrata, apice late rotundata vel leviter retusa; discus callo sulcato miniato vel aurantiaco infra ornatus. Columna generis.

Plant terrestrial, 25–35 cm. tall, aphyllous at the time of flowering, slender, rigidly erect, arising from a solitary tuberoid, stoloniferous, slightly geniculate at the base, glabrous below, the upper part covered with a hoary puberulence; stolons producing at intervals solitary small ovoid tuberoids which are as much as 2 cm. long. Stem provided with appressed green tubular sheaths which are rather abruptly subobtuse to acute. Inflorescence 2-flowered. Flowers white marked with orange or vermilion, subtended by large bracts; pedicellate ovaries covered with a reddish brown glandular puberulence. Floral bracts green, lanceolate, acuminate, about 3.5 cm. long, with involute margins. Sepals densely tuberculose-puberulent on the margins and outer surface; dorsal sepal strongly recurved above the middle, concave below, elliptic-lanceolate, obtuse to shortly subacuminate, prominently 5-nerved, 1.9–2 cm. long, 4.5–6.5 mm. wide; lateral sepals free, divergent, directed downward, lightly carinate along the central nerve, lanceolate, subobtuse to acute, slightly oblique, prominently 3-nerved, 1.7–2 cm. long, 3.1–3.5 mm. wide. Petals conspicuously falcate, oblancheolate, obtuse, gradually tapering below the middle, 1.8–2 cm. long, 3–3.2 mm. wide above the middle. Lip arcuate-decurved in natural position, oblong-oblancheolate, constricted above the middle, 1.8–2.2 cm. long; lower portion (below the constriction) thick, sulcate, minutely pubescent and concave-saccate at the base, provided with sub-

marginal obscure fleshy mammillate callosities on each side at the base, with the margins upturned and slightly undulate, puberulent on the margins and outer surface; apical portion (above the constriction) flat and spreading, broadly ovate to elliptic-subquadrate, broadly rounded to subtruncate or lightly retuse at the apex, with the margin somewhat undulate-crenulate; disc with a sulcate cinnabar or deep orange callus on the lower portion. Column clavellate, about 1.2 cm. long, toothed at the apex.

This species is closely allied to *Spiranthes hyemalis* A. Rich. & Gal., but differs from that species in several characters. *Spiranthes stolonifera* is a rigidly erect, aphyllous plant which develops tuber-bearing stolons. The stem-sheaths are closely appressed and are always abruptly sub-obtuse to acute. The sepals and petals are always obtuse to acute. Plants of *S. hyemalis* rise from a cluster of fusiform-thickened roots and the stem, which is commonly flexuose, is leafy below and provided above with rather loose sheaths which are acuminate and divergent at the apex. The sepals and petals are ordinarily long-acuminate.

GUATEMALA: Huehuetenango, Sierra Cuchumatanes, rocky ridge, beneath pines, alt. 11,200 ft., Sept. 15, 1934, *A. F. Skutch 1254* (Herb. Ames); Sierra Cuchumatanes (north slope), terrestrial in mossy ground, open woods, fls. white, the portion of the labellum which forms the corolla-tube orange, alt. 10,000 ft., Aug. 23, 1934, *A. F. Skutch 1094* (TYPE in Herb. Ames No. 60791).

***Spiranthes prasophylla* Reichb.f. var. *cleistogama* Ames & Correll var. nov.**

Scapo longiore folia multo excedenti et spica conspicue secunda et floribus inapertis a specie differt.

Plant slender, epiphytic, weakly erect, glabrous below, pubescent above, 10–30 cm. tall. Scape slender, two to three times longer than the leaves, provided with several acuminate bracts. Leaves basal, several, clustered, mostly sessile, occasionally shortly petiolate; lamina elliptic-

lanceolate, acute, up to 8 cm. long and 2.5 cm. wide. Spike usually conspicuously secund, up to 13 cm. long. Flowers cleistogamous, smaller than those of the typical form. Lip pandurate, strongly triangular-deltoid as in the typical form, constricted near the apex to form a triangular-quadrate tridentate lobule; callosities thin, triangular, inside the basal margin.

Variety *cleistogama* differs from the typical form of the species mainly in its much longer scape which greatly exceeds the leaves, its conspicuously secund spike, and its cleistogamous flowers.

GUATEMALA: Alta Verapaz, near Cobán, epiphytic, alt. 1350 m., March 1907 and Feb. 1908, *H. von Tuerckheim II 1673* (TYPE in Herb. Ames No. 1824; ISOTYPE in U.S. Nat. Herb. No. 825824).

COSTA RICA: Cartago, El Muñeco, south of Navarro, on tree, flowers green, alt. about 1400 m., Feb. 8, 9, 1924, *P.C. Standley 33802* (Herb. Ames).

***Spiranthes Funckiana* A. Rich. & Gal. var. *olivacea* (Rolfe) Ames & Correll comb. nov.**

Pelexia olivacea Rolfe in Kew Bull. (1891) 200.

Pelexia hondurensis Ames in Sched. Orch. 2 (1923) 4.

Pelexia subaequalis Ames in Sched. Orch. 2 (1923) 5.

Variety *olivacea* may be distinguished from typical *S. Funckiana* through its narrower sepals and petals which are acute to acuminate instead of being obtuse. The base of the lip of var. *olivacea* has thickened, mammillate, semiterete calli, whereas the lip of *S. Funckiana* has oblong, flat, apiculate auricles. The general aspect of the two concepts is very similar. However, the petiole is longer and the lamina of the leaf is much larger in var. *olivacea* than in the typical form of the species. The position and appearance of the lateral sepals is most helpful in separating these two entities in the field. The lateral sepals of var. *olivacea* are not conspicuously arcuate-decurved and directed back toward the rachis as in *S.*

Funckiana but are more slender and gently curved and directed downward and outward.

Uncommon in Mexico, Guatemala, Honduras and South America.

***Spiranthes Llaveana* Lindl. var. *violacea* (A. Rich. & Gal.) Ames & Correll comb. nov.**

Spiranthes violacea A. Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3 (1845) 32.

Variety *violacea* differs from the typical form of the species mainly in that the flowers are mostly smaller, and the lip is pandurate instead of being oblong with obscure lateral constrictions. The apical lobule of the lip is orbicular with undulate-crenulate margins and is usually wider than the basal portion. The basal half below the constriction is obovate to oblong-obovate with the lateral margins rounded toward the constriction. The lip of *S. Llaveana* is usually widest below the slight constriction and the basal half is oblong-quadrate to broadly cuneate with the lateral margins terminated by more or less obtuse angles just below the constriction. The lip of var. *violacea* is white tinged with pink or lavender with the lateral lobules often greenish yellow. The sepals and petals are pink.

Uncommon in Mexico and Guatemala.

***Spiranthes picta* (Anders.) Lindl. var. *assurgens* (Reichb.f.) Ames & Correll comb. nov.**

Spiranthes assurgens Reichenbach filius in Beitr. Orch. Centr.-Am. (1866) 66.

The most distinctive difference separating var. *assurgens* from the typical form is the shape of the lip which is broad at the base and gradually narrowed above to the apical lobe. The lower part of the lip below the constriction is lanceolate instead of oblanceolate as in the typical form of this species. The apical lobe of the lip of var.

assurgens is also sagittiform, whereas that of *S. picta* is cordate or broadly ovate.

Found only in Guatemala.

The following two species of *Spiranthes* are of interest because they are new to Central America.

***Spiranthes tortilis* (Sw.) L. C. Richard** in Mém. Mus. Hist. Nat. Paris 4 (1818) 59, exclude synonym. *Neottia quadridentata*.

Formerly known from Florida to Louisiana, Bermuda, Bahama Islands, the West Indies and Trinidad. Now also known from British Honduras (*Peck* 967), Guatemala (*Steysmark* 38660) and Nicaragua (*Englesing* 303).

***Spiranthes vernalis* Engelmann & Gray** in Boston Journ. Nat. Hist. 5 (1845) 236.

Formerly known from Canada (Quebec) and New England south to Florida and west to Indiana, Illinois, Texas and New Mexico. Now also known from Mexico (*Pringle* 11914, in part) and Guatemala (*Tuerckheim* II 1832; *Skutch* 362).

***Goodyera major* Ames & Correll** *sp. nov.*

Herba terrestris, pro genere grandis, a rhizomate repenti erecto-adscendens. Caulis infra foliosus et glaber, supra bracteatus et glanduloso-pubescent. Folia petiolata; lamina oblique elliptico-lanceolata, acuminata; petiolus tubulari-inflatus. Racemus cylindraceus, spicatus, subdensus, rhachide glanduloso-pubescenti. Florum bracteae ovato-lanceolatae, acuminatae, glanduloso-pubescentes. Flores parvi, ringentes, cum ovariis pedicellatis crassis glanduloso-pubescentibus. Sepalum dorsale lanceolatum, ad apicem obtusum angustatum, canaliculatum, uninervium. Sepala lateralia oblique ovato-lanceolata, obtusa, uninervia, infra concava. Petala sepalo dorsali adhaerentia, ab ungui gracili semirhombica, obtusa, uninervia,

margine exteriore erosa. Labellum sessile; lamina in positu naturali arcuata, basi saccato-globosa et papillis intus praedita, trinervia, cum marginibus superioribus erosis; lamina expansa late oblongo-pandurata, supra medium constricta, tandem in apicem rotundatum vel retusum minute plicatum dilatata. Columna generis.

Plant terrestrial, with a prostrate rhizome, erect-ascending, large for the genus, 5–7 dm. tall. Stem leafy and glabrous on the lower half, bracteate and glandular-pubescent above; bracts acuminate, 1.5–3.5 cm. long. Leaves five to eight, rather large, with conspicuous inflated clasping petioles; petioles tubular at the base, up to 4 cm. long; lamina obliquely elliptic-lanceolate, acuminate, submembranaceous, 7.5–11.5 cm. long, 2–3.5 cm. wide. Inflorescence a cylindrical spicate raceme, rather densely flowered, 6.5–7 cm. long, 2.5 cm. in diameter; rachis glandular-pubescent. Floral bracts ovate-lanceolate, acuminate, glandular-pubescent, 9–12 mm. long, about 3.5 mm. wide near the base. Flowers ringent, with stout glandular-pubescent pedicellate ovaries which are about 1 cm. long. Dorsal sepal lanceolate, tapering to an obtuse apex, 1-nerved, canaliculate, 6–6.5 mm. long, about 2 mm. wide. Lateral sepals somewhat oblique, ovate-lanceolate, obtuse, 1-nerved, concave below, 6.5 mm. long, 3.2 mm. wide below the middle. Petals with a slender claw, adherent to the dorsal sepal, semi-rhombic, obtuse, 1-nerved, erose on the outer margin, slightly denticulate on the inner margin above the middle, 6 mm. long, 2.5 mm. wide at about the middle. Lip sessile, arcuate in natural position, with a globose-saccate base (the sac about 2.5 mm. deep and provided with papillae on the inner surface), 3-nerved, erose on the margins above the middle; when spread out broadly oblong-pandurate with a suborbicular-ovate base, 6 mm. long, 4.5 mm. wide across the base, 2.5–3 mm. wide across

the apical portion, constricted above the middle and dilated at the broadly rounded to truncate or retuse apex, with the apical portion minutely plicate. Column stout, terete, about 4 mm. long.

Goodyera major is the largest known Central American species in this genus. The lip is nearest in shape to that of *G. modesta* Schltr., a Costa Rican species. However, besides having much smaller flowers than *G. major*, *G. modesta* has an entire lip and linear petals. The nearest ally, *G. dolabripetala* (Ames) Schltr., not only has a laxly flowered raceme of much smaller flowers, but has an ovate-lanceolate lip with entire margins.

GUATEMALA: Zacapa, cloud forest in ravine bordering Quebrada Alejandria, summit of Sierra de las Minas, vicinity of Finca Alejandria, alt. 2500 m., Oct. 13, 1939, *J. A. Steyermark* 29886 (TYPE in Herb. Ames No. 60790; ISOTYPE in Herb. Field Mus. No. 1043013).

***Erythrodes ovatilabia* Ames & Correll sp. nov.**

Herba terrestris, ex rhizomate repenti erecto-adscendens. Caulis gracilis, pubescens, infra foliosus, supra bracteatus. Folia petiolata; lamina oblique ovato-elliptica vel ovalis, acuta vel subacuminata, basi rotundata vel sensim angustata; petiolus tubulari-inflatus. Racemus densior, cylindraceus, spicatus, rachide pubescenti. Flo-
rum bracteae ovato-lanceolatae, acuminatae. Flores parvi, cum ovariis pedicellatis pubescentibus. Sepala lanceolata vel anguste elliptico-lanceolata, acuminata vel ad apicem subobtusum sensim angustata, uninervia. Petala sepalo dorsali adhaerentia, semirhombica, obtusa vel subacuta, basi anguste cuneata, uninervia. Labellum basi in calcar saccatum leviter bilobatum productum; lamina tenuis, extensa ovata, obtusa vel acuta, trinervia, saepissime marginibus leviter undulatis. Columna generis.

Plant terrestrial, erect-ascending from a prostrate rhizome, 3-4 dm. tall. Stem slender, pubescent with whitish articulated hairs, leafy on the lower fourth, bracteate

above; bracts acuminate, spreading, up to 3.5 cm. long. Leaves five to eight, petiolate; petiole tubular-inflated below enveloping the stem, up to 3 cm. long; lamina oblique, ovate-elliptic to broadly elliptic, acute to sub-acuminate, rounded or tapering at the base, dark green above with a whitish mid-nerve, gray-green beneath, 3–8.5 cm. long, 1.4–3 cm. wide. Inflorescence a rather densely flowered cylindrical spicate raceme, up to 7 cm. long and 2 cm. in diameter; rachis pubescent. Floral bracts ovate-lanceolate, acuminate, 4–7 mm. long, about 2 mm. wide near the base. Flowers small, with pubescent pedicellate ovaries which are up to 6 mm. long. Sepals lanceolate to narrowly elliptic-lanceolate, acuminate or tapering to a narrowly subobtuse apex, 1-nerved, 4.8–5 mm. long, about 1.5 mm. wide below the middle. Petals adherent to the dorsal sepal, semirhombic, narrowly cuneate at the base, obtuse to subacute, 1-nerved, about 4.5 mm. long and 1.5 mm. wide across the dilated middle portion. Lip produced at the base into a slightly bilobed saccate spur, about 7 mm. long including the spur; lamina thin, when spread out ovate (sometimes narrowly so), obtuse to acute, usually with the margins slightly undulate, 3-nerved, 4 mm. long, 2.5 mm. wide at the base. Column short, thick, about 2.5 mm. long.

Erythroides ovatilabia is one of the few American species in the genus having a simple lip. Its nearest ally, *E. secunda* Ames from Mexico, is a much smaller plant with small ovate-subcordate leaves and a laxly few-flowered secund inflorescence. The essentially oval lip of *E. secunda* has a thickened disc and a somewhat constricted crisped apex. The petals also are spatulate instead of being semirhombic as in *E. ovatilabia*.

MEXICO: Oaxaca, Huautla de Jiménez, terrestrial, oak forest, July 21, 1938, R. E. Schultes and B. P. Reko 407 (Herb. Ames).

GUATEMALA: Chiquimula, upper slopes of Montaña Jajurán, in the

vicinity of El Barriol, alt. 1200-1700 m., Oct. 28, 1939, *J. A. Steyermark 30826* (Herb. Ames, Herb. Field Mus.); Jalapa, Volcán Jumay, north of Jalapa, alt. 1800-2200 m., Dec. 1, 1939, *J. A. Steyermark 32471* (TYPE in Herb. Field Mus. No. 1043068).

***Lepanthes excedens* Ames & Correll sp. nov.**

Herba minuta, caespitosa, epiphytica, erecta vel ascendens. Caulis filiformis, monophyllus, vaginis pluribus infundibuliformibus obtectus. Vaginae caulinae cylindraceae, leviter costatae, supra dilatatae, costis et margine apicali ciliolatis. Folia elliptica vel oblanceolata, obtusa vel subacuta cum apice tridenticulato, in petiolum brevem angustata, carnosa, glabra. Inflorescentiae unicae vel binae, quam folium paulo breviores, laxiflorae. Florum bractae ovato-cucullatae, acutae, ovario pedicellato longiores. Flores perparvi, leviter arcuato-decurvati. Sepala basi connata. Sepalum dorsale elliptico-lanceolatum, acutum, infra medium concavum, trinervium. Sepala lateralía paene usque ad medium connata, oblique ovato-elliptica, acuta. Petala oblique et late flabelliformi-bilobata, in sinu apiculata; lobus posterior oblongo-lanceolatus, obtusus; lobus anterior oblique quadratus, truncatus vel retusus. Labellum ab ungui lato in circuitu obovatum, trilobatum; lobi laterales valde incurvi, lineari-oblanceolati, crescentiformes, apice rotundati, alter alterum excedens; lobus medius parvus, ovato-triangularis, subacutus, valde pubescens. Columna cylindracea, dorso cum lacinia subapicali; clinandrium tridentatum.

Plant minute, erect or ascending, caespitose, epiphytic, usually less than 4 cm. tall. Roots simple, white, filiform. Secondary stem filiform, red, monophyllous, less than 1.5 cm. long, concealed by two or more infundibuliform sheaths. Sheaths dilated and acute at the apex, lightly costate, with the costae and apical margin ciliate. Leaves dark green or ruddy especially on the lower surface and near the margins, elliptic to oblanceolate, obtuse

to subacute and tridenticulate at the apex, tapering at the base into the short petiole, marginate, fleshy, glabrous, somewhat undulate-contracted on the margins and conduplicate-ensiform with age, up to 13 mm. long including the petiole and 5.5 mm. wide. Inflorescences one or two, commonly a little shorter than the leaf, loosely 3- to 8-flowered. Floral bracts ovate-cucullate, acute, glabrous, less than 1 mm. long, longer than the pedicellate ovaries. Flowers extremely small, somewhat arcuate-recurved, about 3 mm. long. Sepals pale yellowish green, united at the base. Dorsal sepal elliptic-lanceolate, acute, concave below the middle, 3-nerved, up to 3 mm. long and 1.5 mm. wide near the base. Lateral sepals united to about the middle, obliquely ovate-elliptic, acute, up to 2.5 mm. long and 1 mm. wide above the point of coalescence. Petals green and reddish purple, broadly flabelliform-bilobed, with an apicule in the sinus, up to 0.5 mm. long and 1.2 mm. wide; posterior lobe oblong-lanceolate, obtuse; anterior lobe obliquely quadrate, truncate or retuse at the apex. Lip bright purple, with a rather broad involute claw, 3-lobed, obovate in outline, about 1 mm. long, usually narrower than long; lateral lobes not auriculate at the base, linear-oblancheolate, crescentiform, broadly rounded at the apex, incurved so as to overlap one another, lightly keeled near the middle; mid-lobe small, narrowly ovate-triangular, subacute, pubescent. Column cylindrical, fleshy, about 1.2 mm. long, with a dorsal flap near the apex, acute-apiculate at the apex; clinandrium tridentate; pollinia two.

This species is easily identified by its peculiar lip which has rather broad lateral lobes which are incurved in front so as to overlap. The column and petals are also distinctive and are useful in separating the species from nearly allied entities. The specific name signifies "overlapping" in reference to the position of the lateral lobes of the lip.

GUATEMALA: Road to Mataquescuintla, about 18 miles from Guatemala City, alt. about 6000 ft., February 19, 1935, *Margaret Ward Lewis* 105 (TYPE in Herb. Ames No. 58148).

Pleurothallis angustisepala *Ames & Correll* sp. nov.

Herba crassa, epiphytica, erecta vel adscendens, glabra, caespitosa. Caulis rigidus, monophyllus, vaginis pluribus scariosis inflatis ornatus. Folium oblongo-ellipticum vel lanceolatum, breviter acuminatum cum apice minute tridenticulato, sessile, coriaceum. Racemi unici vel plures, subsessiles, dense pauciflori, rigidi, basi vagina conduplicata acuminata inclusi. Florum bracteae infundibuliformes, acuto-apiculatae, scariosae. Flores majores, cum pedicellis brevibus bracteis aequilongis. Sepala omnino granosa. Sepalum dorsale anguste lineare, longe acuminatum, trinervium. Sepala lateralina in laminam elliptico-lanceolatam fere usque ad apicem connata; lamina acute bifida, basi conspicue gibbosa, sexnervia, nervo medio utriusque dorso carinato. Petala lineari-oblancoolata, acuta vel breviter acuminata, uninervia, marginibus supra medium irregulariter longe serratis. Labellum basi valde arcuatum, prominenter unguiculatum; unguis subquadratus, incrassatus, dente minuto utrinque basi donatus; lamina triangulari-lanceolata, breviter acuminata, basi auricula denticulata prominenti utrinque praedita; discus trinervius, crasse papillosus. Columna generis.

Plant coarse, epiphytic, erect or ascending, glabrous, caespitose, 11–25 cm. tall. Secondary stem rigid, monophyllous, 2.5–11 cm. long, provided with several scarious somewhat inflated sheaths. Leaf sessile, oblong-elliptic to lanceolate, shortly acuminate and minutely tridenticulate at the apex, coriaceous, dark purple on the lower surface, 6–13 cm. long, 1.5–3.5 cm. wide. Racemes one to several, essentially sessile, rigid, densely few-flowered, up to 4.3 cm. long, enclosed at the base by a scarious

conduplicate sheath; sheath acuminate, up to 1.5 cm. long. Floral bracts infundibuliform, acute-apiculate, scarious, 3-4.5 mm. long. Flowers rather large, yellow or greenish yellow, with short pedicels; pedicels about as long as the bracts. Sepals granulose on the inner and outer surfaces and along the margins. Dorsal sepal narrowly linear, long-acuminate, 3-nerved, sulcate below the middle, 16-17 mm. long, 1.5-2 mm. wide. Lateral sepals united almost to the apex to form an elliptic-lanceolate lamina; lamina sharply bifid, conspicuously gibbous at the base, 6-nerved, dorsally carinate along the mid-nerve of each sepal especially below the middle, 16-18 mm. long, 6.5-7.2 mm. wide at or near the middle. Petals linear-oblongate, acute to shortly acuminate, with the margins irregularly long-serrate above the middle, 1-nerved, 3.5-4.5 mm. long, about 1 mm. wide. Lip strongly arcuate at the base, with a prominent claw; lamina triangular-lanceolate, shortly acuminate, with a prominent denticulate auricle on each side at the base, irregularly fimbriate along the margins, 6-6.3 mm. long, 2.5-3 mm. wide at the base; disc 3-nerved, coarsely papillose; claw fleshy-thickened, subquadrate, with a minute tooth on each side at the base, 1.5-2 mm. long, 1.2-1.5 mm. wide. Column rather stout, broad, irregularly crenate at the apex, 3-4 mm. long, with a foot 3-4 mm. long. Capsule obliquely ellipsoid, about 2 cm. long.

Pleurothallis angustisepala is easily distinguished from *P. Rowleei* Ames, a close ally, by its narrowly linear dorsal sepal and by its differently shaped fimbriate and auriculate lip.

GUATEMALA: Alta Verapaz, above Tamahú, on tree, alt. 900-1200 m., April 5, 1939, *P. C. Standley 70958* (TYPE in Herb. Field Mus. No. 995124); same data, *P. C. Standley 70895* (Herb. Field Mus.); growing on the under side of limbs, on a small shrub at about two to three feet from the ground Nov. 28, 1920, *H. Johnson 1169* (Herb. Ames).

Pleurothallis crucilabia *Ames & Correll sp. nov.*

Herba parva, epiphytica, erecta vel adscendens, caespitosa. Caulis gracilis, unifolius, vaginis lepanthiiformibus omnino obtectus. Vaginae caulinae tubulares, costibus parce hispidis donatae, supra in apicem acuminato-apiculatum hispidum leviter dilatatae. Folium lineari-oblongum, acutum, coriaceum, marginatum, glabrum. Pedunculi saepissime duo, graciles; racemi laxè pauciflori. Florum bracteae infundibuliformes, acuto-apiculatae, scariosae. Flores glabri, valde arcuati, pedicellis gracilibus conspicue arcuatis. Sepalum dorsale elliptico-oblongum, acutum, valde cymbiforme, nervis dorso carinatis. Sepala lateralibus usque ad medium connata, basi gibbosa, oblique triangulari-lanceolata, acuminata, decurvata, dorso carinata. Petala oblique oblonga, apice late rotundata, uninervia. Labellum breviter unguiculatum, in positu naturali arcuatum, expansum trilobatum, trinervium; lobi laterales late rotundati, marginibus apicalibus leviter incrassatis; lobus medius oblongo-quadratus, apice subtruncatus. Columna generis.

Plant small, epiphytic, erect or ascending, caespitose, up to 7.5 cm. tall. Secondary stem slender, monophyllous, 2–3.5 cm. long, concealed by lepanthiiform sheaths; sheaths tubular, acuminate-apiculate at the slightly dilated apex, sparingly hispid along the costae and on the apical margin. Leaf linear-oblong, acute, coriaceous, marginate, glabrous, 1.5–2.5 cm. long, about 5 mm. wide. Peduncles usually two, slender, up to 4 cm. long including the loosely few-flowered raceme. Floral bracts infundibuliform, acute-apiculate, scarious, 1.5–2 mm. long. Flowers pale yellow, glabrous, strongly arcuate, with slender persistent conspicuously arcuate pedicels which are about 3 mm. long. Dorsal sepal elliptic-oblong, acute, deeply cymbiform, 3-nerved, dorsally carinate along the nerves, 4.5–5.3 mm. long, 2.5–3 mm. wide below the mid-

dle. Lateral sepals united to about the middle, gibbous at the base, obliquely triangular-lanceolate, acuminate, decurved, dorsally prominently carinate along the solitary nerve, 4–5 mm. long, 2–2.5 mm. wide across the united basal portion. Petals obliquely oblong, broadly rounded at the apex, 1-nerved, 2–2.5 mm. long, 0.8–1 mm. wide. Lip with a short claw, arcuate in natural position, hastately 3-lobed when spread out, 3-nerved with the nerves extending slightly above the middle of the lip, 3–3.2 mm. long including the claw, 1.8–2.2 mm. wide across the lateral lobes; lateral lobes broadly rounded, slightly thickened on the apical margins; mid-lobe oblong-quadrate, subtruncate at the apex, about 1 mm. wide. Column short, stout, fleshy, tridentate at the apex, 2 mm. long, with a foot about 1 mm. long. Capsule obliquely globose, about 4 mm. long.

This species is unique among the Guatemalan species of *Pleurothallis* in that it has a subequally three-lobed lip. There seems to be no closely allied species in Central America. The Jamaican *Pleurothallis trilobata* Fawc. & Rendle has a similarly shaped lip. However, that species is a minute plant less than 1 cm. tall and the lip is only about one half as long as that of *P. crucilabia*.

GUATEMALA: Guatemala, Volcán de Pacaya, above Las Calderas, alt. 1800–2400 m., Nov. 30, 1938, *P.C. Standley 58433* (TYPE in Herb. Field Mus. No. 974102).

***Pleurothallis triangulipetala* Ames & Correll sp. nov.**

Herba parva, epiphytica, caespitosa, erecta. Caulis gracilis, unifolius, vaginis lepanthiiformibus obtectus; vaginae tubulatae, costis prominentibus hispidis, in apicem acuto-apiculatum hispido-ciliatum dilatatae. Folium a petiolo brevi sulcato suborbiculare vel late ellipticum, obtusum vel retusum et cuspidatum, marginatum, glabrum, coriaceum. Pedunculi plures, filiformes, glabri, cum

racemo paucifloro, Florum bracteae ovato-cucullatae, subacutae, scariosae. Flores parvi, cum ovariis pedicellatis gracilibus bracteis subaequalibus. Sepalum dorsale triangulari-ovatum, obtusum, supra parce ciliatum. Sepala lateralia fere usque ad apicem connata, laminam late ellipticam formantia; lamina obtuse bifida, dorso bicarinata, supra parce ciliata. Petala oblique triangularia, breviter acuminata, uninervia. Labellum in positu naturali arcuato-decurvatum, expansum lineari-oblongum, obtusum, infra medium leviter dilatatum, marginibus inferioribus leviter incurvatis et marginibus superioribus revolutis, basi utrinque cum auricula parva incurvata; lamina obscure trinervia, tertia inferiore callo lineari supra bifurcato ornata. Columna generis.

Plant small, epiphytic, erect, caespitose, up to 8 cm. tall. Secondary stem slender, monophyllous, 1.8–5 cm. long, concealed by three to six lepanthiform sheaths; sheaths tubular, acute-apiculate at the dilated apex, hispid along the prominent costae and apical margin. Leaf with a short sulcate petiole, suborbicular to broadly elliptic, obtuse and retuse at the apex with a cusp in the sinus, marginate, glabrous, coriaceous, 2–3 cm. long, 1–1.5 cm. wide. Peduncles several, filiform, glabrous, about 1.5 cm. long including the few-flowered raceme. Floral bracts ovate-cucullate, subacute, scarious, tinged with purple, about 2 mm. long. Flowers small, purplish white, with slender pedicels which are about as long as the bracts. Dorsal sepal triangular-ovate, obtuse, 3-nerved, sparingly ciliate on the apical margins, 4 mm. long, 2.2 mm. wide at the base. Lateral sepals united almost to the apex to form a broadly elliptic lamina; lamina obtusely bifid, 4 mm. long, 2.5 mm. wide, 6-nerved, dorsally carinate along the mid-nerve of each sepal, sparingly ciliate on the apical margins. Petals obliquely triangular, shortly acuminate, entire, 1-nerved,

1.5 mm. long, about 0.7 mm. wide at the base. Lip arcuate-decurved in natural position, linear-oblong when spread out, obtuse, slightly dilated below the middle with the margins somewhat upturned, apical margins deflexed, silky-pubescent along the margins, with a small incurved auricle on each side at the base, 2.5 mm. long, about 1 mm. wide; disc obscurely 3-nerved, provided in the middle of the lower third with a linear callus which divides and extends above the middle of the lip as two slightly thickened ridges. Column short, stout, fleshy, irregularly serrate at the apex, 1.5 mm. long, with a broad foot about 1 mm. long. Capsule subglobose, about 5 mm. long.

This species is closely allied to *P. Blaisdellii* S. Wats. and *P. gnomonifera* Ames, but differs mainly in its entire triangular petals and essentially glabrous sepals.

GUATEMALA: Sacatepéquez, Barranco Hondo, lower slopes of Volcán de Fuego, alt. about 1800 m., Dec. 16, 1938, *P. C. Standley 60278* (TYPE in Herb. Field Mus. No. 993854).

Liparis vexillifera (*La Llave & Lex.*) Cogn. var.
Galeottiana (*A. Rich. & Gal.*) Ames & Correll comb.
nov.

Malaxis Galeottiana A. Richard & Galeotti in Ann.
Sci. Nat. ser. 3, 3 (1845) 18.

Liparis Galeottiana Hemsley in Gard. Chron. n.s. 11
(1879) 559.

Variety *Galeottiana* is distinguished from the typical form of the species mainly in the size of the flowers, in the shape and coloration of the lip and in the size of the leaf. The lip of var. *Galeottiana* is brownish purple to almost maroon, not constricted above the middle, broadly ovate-oval to oval-subquadrate, subtruncate to obtuse at the apex, often with conspicuous auricles at the base and is usually about 10 mm. long and 8 mm. wide. The lip of *L. vexillifera* is greenish marked with purple, with a definite constriction above the middle, orbicular-ovate to

ovate-oblong, obtuse to acute at the apex and is commonly 7 mm. long and 5.5 mm. wide. Although plants intermediate between var. *Galeottiana* and *L. vexillifera* are occasionally found, the above characters are rather constant in the two entities.

Variety *Galeottiana* is apparently confined to the mainland of Mexico, Guatemala, Honduras, Venezuela, Bolivia and Argentina.

Nageliella angustifolia (*Booth ex Lindl.*) Ames & Correll comb. nov.

Hartwegia purpurea Lindl. var. *angustifolia* Booth ex Lindley in Bot. Reg. 29 (1843) Misc. p. 45.

Vegetatively, *Nageliella angustifolia* and *N. purpurea* (Lindl.) L. O. Wms. are strikingly similar, the only difference being that the leaves of *N. angustifolia* are commonly narrower and thicker than those of *N. purpurea*. However, florally, the two plants are quite distinct and are here considered to be specifically different. The lip of *N. angustifolia* does not have a protruding saccate base as does the lip of *N. purpurea*. The lip is also only slightly adnate to the column instead of being conspicuously adnate as in *N. purpurea*, and the apical portion of the lip is much larger and of a form different from that of *N. purpurea*.

This species is apparently endemic to Guatemala where it is very rare.

Epidendrum alticola Ames & Correll sp. nov.

Herba erecto-adscendens, ramosa, magna, epiphytica. Caulis teres, vaginis tubulatis evanidis omnino celatus. Folia duo, caulis primarii et ramorum apice subopposita, oblongo-elliptica, obtusa vel subacuta. Inflorescentia racemosa, inter folia exoriens, pendula. Florum bractee lineari-lanceolatae, acuminatae. Flores pro genere mediocres, incrassati. Sepalum dorsale oblongo-oblancheolatum,

apice obtuso apiculatum. Sepala lateralìa oblique elliptico-ovata, acuta, dorso cum carina conspicua denticulata. Petala oblique spathulato-oblanœolata, acuta. Labellum columnae valde adnatum; lamina suborbiculari-cordata, apice retusa, basi valde cordata, multivenosa, obtuse tri-carinata cum carinis lateralibus brevibus et carina media longa supra sensim dilatata. Columna magna, generis.

Plant epiphytic, erect-ascending, branched, large, 45 cm. tall. Stem terete, wiry, about 5 mm. in diameter, concealed by the imbricated scarious leaf-sheaths. Leaves two, at the summit of the main stem and branches, sub-opposite, oblong-elliptic, obtuse to subacute, articulate with the leaf-sheaths, 8-11.5 cm. long, 2-2.5 cm. wide, each pair of leaves subtended by two scarious sheaths, the upper sheath long-acuminate. Inflorescence a simple raceme at the apex of the main stem and branches, from between the two leaves; raceme recurved-pendent, 12.5 cm. long including the short peduncle, 6 cm. in diameter. Floral bracts linear-lanceolate, acuminate, scarious, up to 2.3 cm. long. Flowers rather large, fleshy-thickened, with slender pedicellate ovaries which are about 2 cm. long. Sepals and petals cream-color or light tan. Dorsal sepal oblong-oblanœolate or occasionally oblong-elliptic, narrowly obtuse-apiculate at the apex, 1.7 cm. long, 6 mm. wide. Lateral sepals oblique, ovate-elliptic or occasionally oblong-elliptic, acute, prominently keeled along the back with the keel excurrent and toothed along the margin, 1.8 cm. long, 6.5 mm. wide. Petals oblique, spatulate-oblanœolate, acute, minutely ciliate, 1.7 cm. long, 5 mm. wide. Lip adnate to the column; lamina suborbicular-cordate, retuse at the apex, strongly cordate at the base, waxy white, 1.5 cm. long, 1.8 cm. wide; disc prominently veined, with three keels in the center, the lateral keels much thickened near the base of the lip and scarcely extending to the middle of the lip, the central

keel extending to the apical sinus and conspicuously broadened and enlarged at the apex. Column clavate, large, 9 mm. long.

This species is allied to *Epidendrum arbuscula* Lindl., *E. comayaguense* Ames and *E. bisulcatum* Ames. It differs from *E. arbuscula* primarily in its simple instead of 3-lobed lip and from *E. bisulcatum* chiefly in the ob-lanceolate instead of linear petals and the strongly carinate instead of ecarinate lateral sepals. It differs from *E. comayaguense* primarily in the larger many-flowered raceme, strongly carinate lateral sepals and entire, not fimbriate, lip.

GUATEMALA: Chimaltenango, quite abundant at an altitude of 8000 ft. near Calderas on Volcán de Acatenango, May 29, 1939, *J.R. Johnston* 1472 (TYPE in Herb. Ames No. 58193).

***Epidendrum verrucosum* Sw. var. *myrianthum* (Lindl.) Ames & Correll comb. nov.**

Epidendrum myrianthum Lindley Fol. Orch. Epid. (1853) p. 59.

Epidendrum myrianthum Lindl. [var.] *album* "Rehb. f." ex Williams Orch. Grow. Man. ed. 7 (1894) 387.

Variety *myrianthum* is identical in habit with *E. verrucosum* and, except for the color, the flowers are also identical in appearance. Instead of being constantly white as in the typical form of the species, the color of the flowers of var. *myrianthum* varies from almost pure white to a deep ruby-red or purplish red. They also have an odor of lilacs. The character which best separates these two concepts is the callus on the lip. The callus of var. *myrianthum* is 2-lobed at the apex instead of being 3-lobed as in *E. verrucosum*. The callus has the appearance of being composed of two distinct short linear keels. Variety *myrianthum* is closely related to *E. centropetalum* Reichb.f.

Mexico, Guatemala and Honduras; rare.

***Scaphyglottis minutiflora* Ames & Correll sp. nov.**

Herba diffusa, saepe ramosa, nodis radicans. Caules fasciculati, teretes, tenuiter fusiformes, nodis constrictis basibus vaginis pluribus tubulatis imbricatis celatis. Folia in nodis bina, linearia vel lineari-lanceolata, apice acuminate oblique bidentata, erecta vel erecto-patentia. Inflorescentiae in nodis glomeratae. Flores minuti, plures vel numerosi, succedanei, subsessiles. Sepala ovato-elliptica, acuta vel subobtusata, trinervia, concava, lateralialia leviter obliqua et mentum parvum formantia. Petala lineari-oblonga, leviter obliqua, obtusa, uninervia. Labellum columnae pedi subarticulatum, leviter trilobatum, apice expanso truncatum vel leviter retusum; lobi laterales parvi, rotundati, mediani, in positu naturali erecti; lobus medius expansus quadratus marginibus crenulatis incurvatis. Columna generis.

Plant fasciculate, straggly, frequently branching, with adventitious roots at the nodes, 2.5–7.5 dm. tall. Stem terete, slender-fusiform, constricted at the nodes, the individual internodes enveloped at the base by several scarious tubular imbricated sheaths; lowermost internode up to 26 cm. long and 5 mm. in diameter. Leaves produced in pairs at the nodes, erect to erect-spreading, articulated with the leaf-sheaths, linear to linear-lanceolate, obliquely bidentate at the acuminate apex, firmly membranaceous, 5–18 cm. long, 3–10 mm. wide. Inflorescences glomerate, produced at the nodes, composed of several or numerous almost sessile flowers appearing successively from between dry fibrous bracts which form tufts around the flowers. Flowers minute, with pedicellate ovaries which are 3–4 mm. long, white or greenish white marked with maroon or deep violet. Sepals ovate-elliptic, subobtusate to acute, 3-nerved, concave, 2.2–3 mm. long, 1.2–1.5 mm. wide; lateral sepals slightly oblique and connate below the column-foot to form a small mentum. Petals

slightly oblique, linear-oblong, obtuse, 1-nerved, 2–2.5 mm. long, about 0.7 mm. wide. Lip subarticulate with the column-foot, lightly 3-lobed, 5-nerved, truncate to lightly retuse at the apex when spread out, with two deep violet or maroon blotches on each side near the apex, 3–3.5 mm. long, 1.7–2 mm. wide across the lateral lobes when spread out; lateral lobes small, rounded, arising from about the middle of the lip, erect in natural position; mid-lobe quadrate when spread out, with the crenulate margins upcurved in natural position. Column 2–2.5 mm. long. Capsule obliquely ovoid, 5–6 mm. long.

Scaphyglottis minutiflora is most closely allied to *S. Behrii* (Reichb. f.) Benth. & Hook. f. ex Hemsl. However, it differs from that species not only in its smaller flowers and broader leaves but also in the shape of the lip. The lip of *S. minutiflora* is elliptic in outline with a broad base and the lateral lobes are produced at about the middle of the lip. The lip of *S. Behrii* is spatulate or obovate in outline, is narrowed at the base and the lateral lobes are produced above the middle or near the apex of the lip. The flowers of both species are produced in fascicles at the nodes. However, the flowers and capsules of *S. minutiflora*, which are essentially sessile, are borne in glomerules and are surrounded by tufts of fibrous bracts, whereas the flowers and capsules of *S. Behrii* are distinctly pedicellate and are subtended by solitary bracts.

BRITISH HONDURAS: Stann Creek Valley, Antelope Ridge, on tree, hilltop in "Mountain cabbage" ridge, Jan. 24, 1940, *Percy H. Gentle 3162* (Herb. Ames).

GUATEMALA: Izabal, La Vigia, between Bananera and Quiriguá, Sept. 15, 1936, *Margaret Ward Lewis 186* (TYPE in Herb. Ames No. 59153); between Bananera and "La Presa" in Montaña del Mico, alt. 40–300 m., epiphyte on small tree, along stream above waterfall, March 28, 1940, *J. A. Steyermark 38248* (Herb. Ames, Herb. Field Mus.).

PANAMA: Coelé, hills north of El Valle de Antón, alt. 800-1000 m., epiphytic, sepals and petals greenish white, labellum marked with maroon, Nov. 21, 1940, *P. H. Allen 2258* (Herb. Ames).

Since *Hexadesmia* and *Scaphyglottis* are now considered to be congeneric (Schweinfurth in Bot. Mus. Leaflet. Harvard Univ. 10 (1941) 27), the following new combinations are necessary for the following Guatemalan species.

***Scaphyglottis confusa* (Schltr.) Ames & Correll**
comb. nov.

Hexadesmia confusa Schlechter in Fedde Repert. 10 (1912) 361.

Pachystele confusa Schlechter in Fedde Repert. Beih. 19 (1923) 114.

Scaphyglottis confusa is distinguished from *S. livida* (Lindl.) Schltr. and from *S. Jiminezii* Schltr., two closely allied species, not only by its crenulate lip-margin but also by the pedicellate ovaries which are always concealed by the closely imbricated floral bracts. The flower, itself, is often partially concealed by the subtending bracts.

Uncommon in Mexico; rather common in Guatemala and Honduras.

***Scaphyglottis crurigera* (Batem. ex Lindl.) Ames & Correll**
comb. nov.

Hexopia crurigera Bateman ex Lindley in Bot. Reg. 26 (1840) Misc. p. 46, *nomen*; ex Lindley in Bot. Reg. 30 (1844) Misc. p. 2, *in synonym*.

Hexadesmia crurigera Lindley in Bot. Reg. 30 (1844) Misc. p. 2.

Mexico, Guatemala, Salvador and Costa Rica.

***Scaphyglottis micrantha* (Lindl.) Ames & Correll**
comb. nov.

Hexadesmia micrantha Lindley in Bot. Reg. 30 (1844) Misc. p. 2.

Rare in Guatemala and Honduras; widespread and rather common in Costa Rica.

Bothriochilus densiflorus (Rolfe) Ames & Correll
comb. nov.

Coelia densiflora Rolfe in Kew Bull. (1906) 375.

Although Williams, in his contribution concerning the genus *Bothriochilus* (Bot. Mus. Leaflet. Harvard Univ. 8 (1940) 145), had no material of *Coelia densiflora* with which to work, he correctly pointed out that this species was undoubtedly referable to *Bothriochilus*. Since then, some excellent material of an inflorescence preserved in alcohol and analytical photographs of the species have been sent to us from Guatemala by Margaret Ward Lewis, thus making it possible for us to study this species and to verify Williams' supposition. *Bothriochilus densiflorus* is unusual in that the inflorescence is composed of numerous (150-200) small white flowers in a dense, capitate raceme.

Apparently endemic to Guatemala.

Stanhopea Lewisae Ames & Correll *sp. nov.*

Herba epiphytica, pseudobulbosa. Pseudobulbus globosus vel ovoideus, vaginis fibrosis scariosis in parte celatus. Folium unicum, terminale; petiolus sulcatus; lamina elliptica, nitens, apice subapiculata, prope basim plicata, cum nervis quinque dorso prominentibus. Inflorescentia a pseudobulbi basi dependens, bracteis siccis imbricatis tecta. Florum bracteae expansae suborbiculari-ellipticae, apiculatae, fibrosae, albae, valde concavae. Flores grandes, spectabiles, cum ovariis pedicellatis papillosis obtuse trigonis. Sepalum dorsale oblongo-ellipticum, apice carinato, rotundatum vel subapiculatum. Sepala lateralia oblique ovato-elliptica, apice carinato late obtusa vel apiculata, valde concava, basi breviter connata. Petala ovato-lanceolata, leviter obliqua, acuta vel breviter acu-

minata. Labellum complicatum, carnosum, rigidum, nitens; dimidium inferius subgloboso-saccatum, intus verrucoso-corrugatum, extus per medium leviter sulcatum, supra carnosissimum et profunde sulcatum, apice bicornutum; cornua incurva, dimidii anterioris margines basales amplectentia; dimidium anterius planum, late rhombico-ovatum, apice rotundato-obtusum, leviter sulcatum. Columna plana, leviter arcuata, supra alata.

Plant epiphytic, composed of a small monophyllous pseudobulb and a pendent several-flowered inflorescence, 3.5–7.5 dm. tall. Pseudobulb globose to ovoid, 4–5 cm. long, 2.5–3 cm. wide at the base, partially concealed by fibrous scarious sheaths. Leaf solitary, at the apex of the pseudobulb; petiole sulcate, 9–12 cm. long, 7–8 mm. in diameter; lamina dark green, glossy, elliptic, subapiculate at the apex, plicate toward the base with five prominent nerves which form dorsal keels, 40–50 cm. long, 12–14 cm. wide. Inflorescence a 3- to 5-flowered raceme, pendent from the base of the pseudobulb and covered with dry hard imbricating bracts which vary from 1.5 to 4 cm. in length. Floral bracts suborbicular-elliptic when spread out, apiculate, fibrous, whitish, deeply concave, with the margins involute, 5–6.5 cm. long, up to 5.5 cm. wide when spread out. Flowers large, showy, creamy white with purple or reddish flecks, with somewhat triangular papillose pedicellate ovaries which are 6.5–9 cm. long. Dorsal sepal oblong-elliptic, rounded or subapiculate at the dorsally keeled apex, 5–5.7 cm. long, 2.5–3 cm. wide. Lateral sepals oblique, ovate-elliptic, broadly obtuse to apiculate at the dorsally keeled apex, deeply concave, united at the base for a short distance and conforming with the basal half of the lip, 5.5–6 cm. long, 3.3–3.7 cm. wide below the middle. Petals slightly oblique, ovate-lanceolate, acute to shortly acuminate, 4–4.7 cm. long, 1.6–1.9 cm. wide near the base. Lip fleshy and

rigid with a glossy wax-like appearance, 4–4.5 cm. long, complex in structure; basal half deep yellow with lines of purple flecks, subglobose-saccate, centrally lightly sulcate beneath, verrucose-corrugated on the interior surface, very fleshy-thickened and deeply sulcate in front, 2.3–2.8 cm. wide, 1.5–2 cm. deep, on each side provided with a short terete horn; horns incurved, adnate to and conforming with the basal margins of the upper half of the lip, the free part about 6 mm. long; upper half of lip flat, whitish, densely flecked with red, broadly rhombic-ovate, rounded-obtuse at the apex, lightly and broadly sulcate, about 2 cm. long and 2–2.5 cm. wide. Column flat, somewhat arcuate, lightly winged above, about 3.5 cm. long and 1.2 cm. wide above the middle.

Stanhopea Lewisae is without close allies. It is distinguished from all other species of *Stanhopea* by the extremely short lateral horns on the lip which are terete and free for only about 6 mm. The rigid apical portion of the lip is also characteristic of this species.

It is rather unusual to find a new species in such a showy genus as *Stanhopea*. We take pleasure in naming this species in honor of its discoverer, Margaret Ward Lewis.

GUATEMALA: Izabal, Los Andes district, near Entre Ríos, altitude about 15 ft., June 12, 1935, *Margaret Ward Lewis 140* (TYPE in Herb. Ames No. 60789).

***Campylocentrum microphyllum* Ames & Correll**
sp. nov.

Herba epiphytica, prorepens, caules pendentes vel ascendentes simplices vel subinde ramosos, foliorum vaginis celatos ferens. Radices fibrosae, flexuosae. Folia parva, disticha, ad foliorum vaginas articulata, linearia vel lineari-lanceolata, apice oblique retusa, medio longitudinaliter sulcata, marginibus subapicalibus saepissime minute serrulatis; vaginae tubulares, complanatae, marginem apicali dentibus rigidis. Racemi unici vel bini, breves,

axillares; rhachide et pedunculo brevi filiformi. Florum bracteae ovatae, acutae, concavae, ciliatae. Flores distichi, perparvi. Sepalum dorsale ovato-oblongum, anguste obtusum, concavum, uninervium. Sepala lateralalia anguste triangulari-lanceolata, acuta, concava, uninervia. Petala lanceolata, acuta vel anguste obtusa, uninervia. Label- lum rhombico-ovatum, ad apicem subacutum angustatum, infra concavum, uninervium, in calcar conspicuum productum; calcar clavatum, labello longius, prope basim abrupte decurvatum. Columna generis. Capsula ellipsoidalis.

Plant epiphytic, creeping, with pendent or ascending stems up to 15 cm. long; stems occasionally branching, less than 2 mm. in diameter, concealed by the leaf-sheaths. Roots grayish, fibrous, flexuous. Leaves small, distichous, articulated with the leaf-sheaths, linear to linear-lanceolate, very obliquely retuse at the apex, fleshy-coriaceous, grass-green, sulcate along the midrib, usually minutely serrulate on the margins near the apex, 1.4–2.2 cm. long, 3–5.5 mm. wide; leaf-sheaths tubular, compressed, bony-toothed on the apical margin. Inflorescence composed of short racemes produced singly or in pairs in the axils of the upper leaves; rachis and short peduncle filiform, 1.5–2.5 cm. long. Floral bracts ovate, acute, concave, ciliate on the margins, 0.5–1 mm. long. Flowers distichous along the rachis, as many as fifteen. Dorsal sepal ovate-oblong, narrowly obtuse, concave, 1-nerved, 1.2 mm. long, about 0.5 mm. wide below the middle. Lateral sepals narrowly triangular-lanceolate, acute, concave, 1-nerved, 1.8 mm. long, 0.5 mm. wide near the base. Petals lanceolate, narrowly obtuse to acute, 1-nerved, 1.1 mm. long, 0.4 mm. wide. Lip rhombic-ovate, narrowed above to the subacute apex, concave below, with a central nerve, 1.5 mm. long, 1 mm. wide across the widest point, produced below into a prominent spur; spur cla-

vate, exceeding the lip, abruptly decurved near the base, 2 mm. long. Column short, sessile. Capsule ellipsoidal, about 4 mm. long and 2 mm. in diameter.

This species is most closely allied to *C. Brenesii* Schltr. and *C. longicalcaratum* A. & S. It differs from *C. Brenesii* in the longer leaves, more slender rachis, longer spur and simple (not 3-lobed) lip. It differs from *C. longicalcaratum* in the longer leaves, shorter spur and simple (not 3-lobed) lip.

MEXICO: Chiapas, system of Volcano Tacaná, Pacific slopes, virgin forest near "La Gloria," about 25 km. north of Tapachula, on trees, long. about $92^{\circ} 15'$, lat. about $15^{\circ} 4'$, alt. about 1200 m., Jan. 29, 1935, O. Nagel 4426 (Herb. Ames).

GUATEMALA: San Marcos, epiphyte on tree trunk, leaves fleshy coriaceous, grass-green above, sulcate-nerved along the midrib, paler grass-green beneath, above Finca El Porvenir, Cerro de Mono, south-facing slopes of Volcán Tajumulco, alt. 1400-1700 m., March 9, 1940, J. A. Steyermark 37376 (TYPE in Herb. Field Mus. No. 1041877).

We are grateful to Mr. Charles Schweinfurth for his cooperation and assistance in the preparation of this paper.

EXPLANATION OF THE ILLUSTRATIONS

PLATE II. *CRANICHIS HIEROGLYPHICA* Ames & Correll. 1, plant, one half natural size. 2, flower, spread open, ten times natural size. 3, flower, side view, six times natural size. 4, lip and column, side view, ten times natural size. 5, lip, spread out, ten times natural size.

PLATE III. *SPIRANTHES STOLONIFERA* Ames & Correll. 1, plant, natural size. 2, flower, front-side view, twice natural size. 3, flower, front view, twice natural size. 4, lip, column and lateral sepals, spread open, twice natural size. 5, petals and dorsal sepal, spread out, twice natural size.

PLATE IV. *GOODYERA MAJOR* Ames & Correll. 1, plant, one half natural size. 2, flower, side view, five times natural size. 3, flower, spread open, three times natural size. 4, lip, partly spread out, six times natural size.

PLATE V. *ERYTHRODES OVATILABIA* Ames & Correll. 1, plant, natural size. 2, flower, side view, five times natural size. 3, dorsal sepal, five times natural size. 4, lip, partly spread out, five times natural size. 5, lateral sepal, five times natural size. 6, petal, five times natural size.

PLATE VI. *LEPANTHES EXCEDENS* Ames & Correll. 1, plant, twice natural size. 2, sepals, spread out, seven and one half times natural size. 3, lip, from above, twenty times natural size. 4, petal, twenty times natural size. 5, column, dorsal-side view, fifteen times natural size.

PLEUROTHALLIS ANGUSTISEPALA Ames & Correll. 6, plant, one half natural size. 7, flower, side view, twice natural size. 8, sepals spread out and column, twice natural size. 9, lip, spread out, five times natural size. 10, petal, seven and one half times natural size.

PLATE VII. *PLEUROTHALLIS CRUCILABIA* Ames & Correll. 1, plant, natural size. 2, flower, side view, five times natural size. 3, lip, side view from above, ten times natural size. 4, lip, spread out, ten times natural size. 5, petal, ten times natural size.

PLEUROTHALLIS TRIANGULIPETALA Ames & Correll. 6, plant, natural size. 7, flower, side view, ten times natural size. 8, lip, from above, ten times natural size. 9, lip, side view, ten times natural size. 10, petal, ten times natural size.

PLATE VIII. *EPIDENDRUM ALTICOLA* Ames & Correll. 1, terminal portion of plant, natural size. 2, flower, one and one half times natural size. 3, lip, from above, twice natural size. 4, lateral sepal, from above, twice natural size.

PLATE IX. *SCAPHYLOTTIS MINUTIFLORA* Ames & Correll. 1, plant, one half natural size. 2, flower, spread open, seven and one half times natural size. 3, flower, side view, seven and one half times natural size. 4, lip, spread out, ten times natural size.

PLATE X. *STANHOPEA LEWISAE* Ames & Correll. 1, plant, one half natural size. 2, lip and column, side view, natural size. 3, lip, from above, natural size. 4, column, anterior surface, natural size.

PLATE XI. *CAMPYLOCENTRUM MICROPHYLLUM* Ames & Correll. 1, plant, natural size. 2, portion of plant showing fruiting racemes, natural size. 3, flower, spread out, ten times natural size. 4, flower, side view, ten times natural size. 5, capsule with remains of flower, five times natural size.

CRANICHIS

hieroglyphica

Ames & Correll

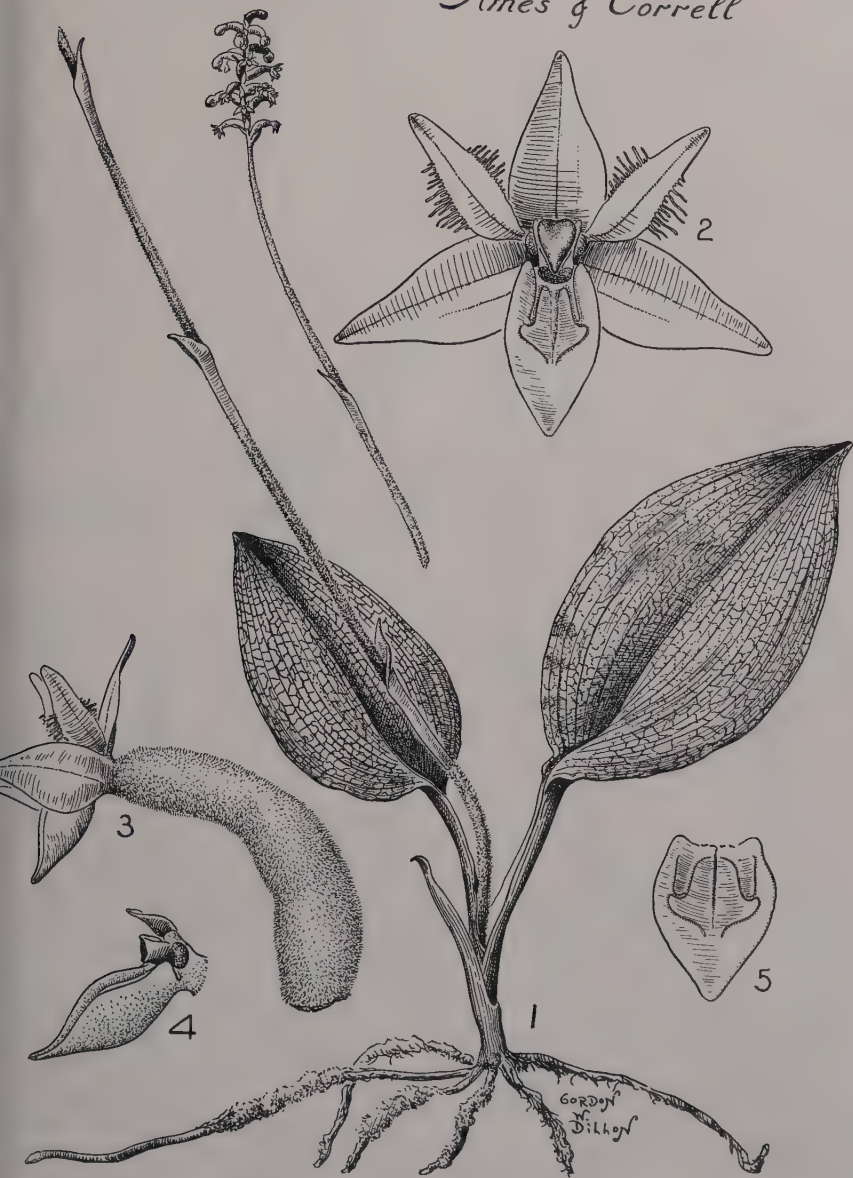


PLATE III

SPIRANTHES

stolonifera Ames & Correll





GOODYERA

major Ames & Correll

ERYTHRODES

ovatilabia

Ames & Correll



LEPANTHES

excedens Ames & Correll

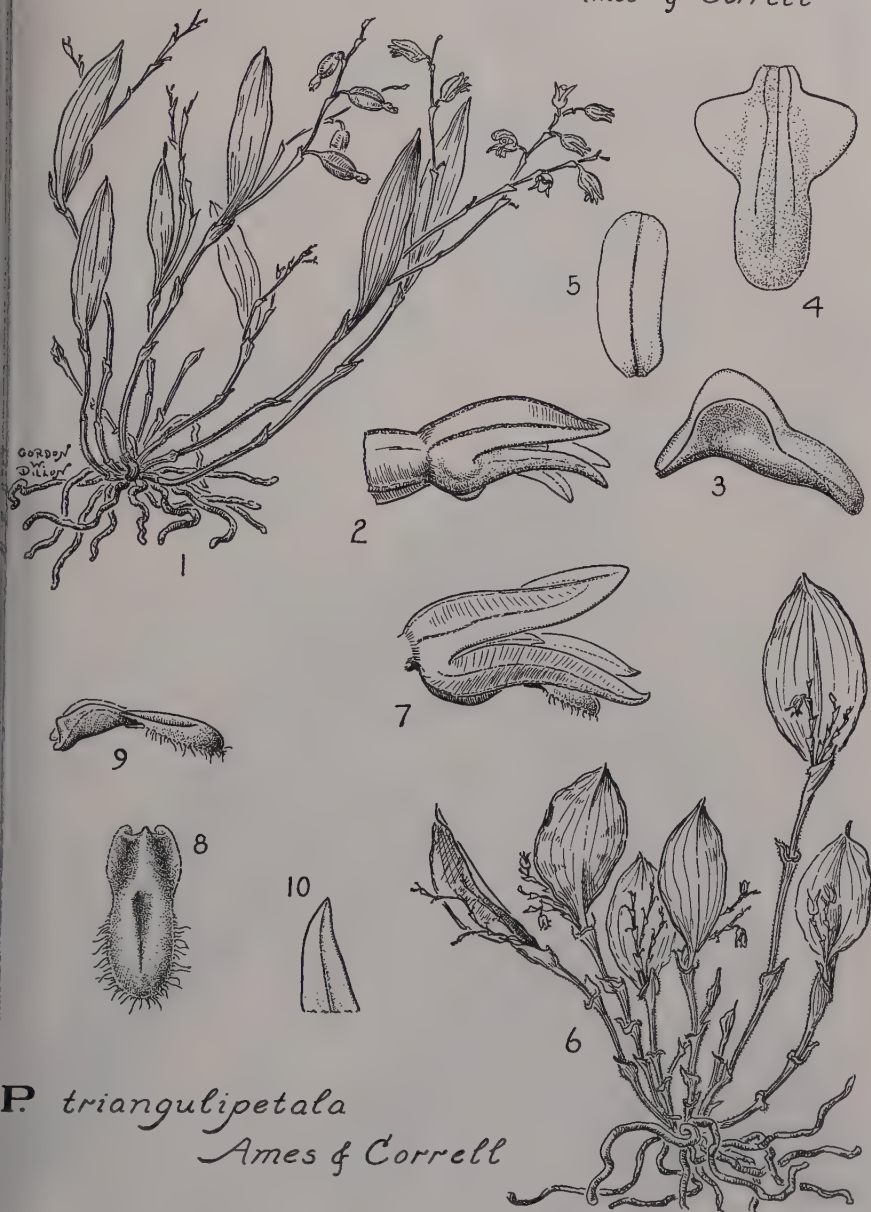


PLEUROTHALLIS

angustisepala Ames & Correll

PLEUROTHALLIS

crucilabia Ames & Correll



P. triangulipetala
Ames & Correll

PLATE VIII

EPIDENDRUM

alticola

Ames & Correll

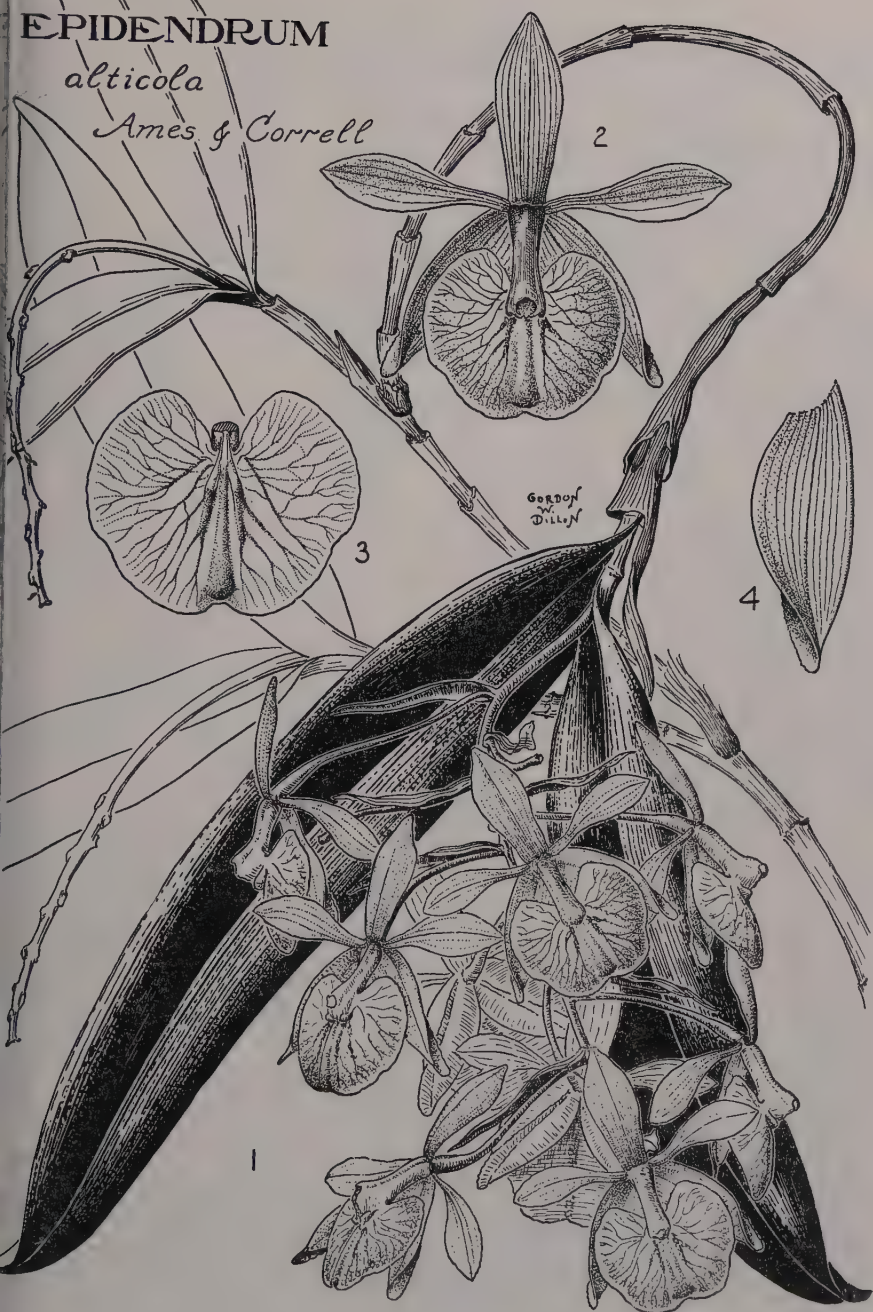


PLATE IX



SCAPHYGLOTTIS

minutiflora Ames & Correll

PLATE X

STANHOPEA

Lewisae Ames & Correll





